DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-017298
Date Inspected: 30-Sep-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
Location: Shanghai, China

CWI Name:	See Below		**CWI Present:**	☑ Yes	☐ No
Inspected CWI report:	☐ Yes	☑ No ☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No ☐ N/A
Electrode to specification:	☑ Yes	☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No ☐ N/A
Qualified Welders:	☑ Yes	☐ No ☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No ☐ N/A
Approved Drawings:	☑ Yes	☐ No ☐ N/A	**Approved WPS:**	☑ Yes	☐ No ☐ N/A
			Delayed / Cancelled:	☐ Yes	☑ No ☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:
CWI Inspectors: ZPMC: Mr. Liu Hua Jie, Mr. An Qing Xiang, Mr. Li Yang

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Segment Trial Assembly

This QA Inspector observed ZPMC welder Mr. Yun Qiang, stencil 044504 used shielded metal arc welding process to make a fillet weld to attach a temporary alignment plate to OBG segment 11AE and 11BE bikepath side plate adjacent to the bottom plate. This stiffener plate was installed to minimize distortion of the side plates when the hold back welds are made between the side plates and bottom plates. This QA Inspector observed a welding current of approximately 155 amps, Mr. Yun Qiang appeared to be certified to make this weld and the base material was preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Chen Lin Li, stencil 053871 used shielded metal arc welding process to make OBG segment 11AE weld SEG064A-043 and11BE weld SEG066A-013. These hold back welds join the side plates to the bottom plate welds on the cross beam side of the OBG. This QA Inspector observed a welding current of approximately 155 amps, Ms. Chen Lin Li appeared to be certified to make this weld and the

base material was preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Hongchang, stencil 052763 used flux cored welding procedure WPS-B-T-2233T to make weld OBE11B-002. This butt weld joins the inside surface of cross beam side plates between OBG segments 11AE and 11BE. This QA Inspector observed a welding current of approximately 220 amps and 26 volts. This QA Inspector observed Mr. Wang Hongchang appeared to be certified to make this weld and the base material had been preheated with electric heating elements. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Tang Zhen Hua, stencil 040465 used flux cored welding procedure WPS-B-T-2233T to make weld OBE11B-002. This butt weld joins the inside surface of cross beam side plates between OBG segments 11AE and 11BE. This QA Inspector observed a welding current of approximately 220 amps and 25 volts. This QA Inspector observed Mr. Tang Zhen Hua appeared to be certified to make this weld and the base material had been preheated with electric heating elements. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Heishan, stencil 040458 used flux cored welding procedure WPS-B-T-2233T to make weld OBE11B-004. This butt weld joins the inside surface of bikepath side plates between OBG segments 11AE and 11BE. Prior to commencement of starting this weld this QA Inspector observed a ZPMC CWI Mr. An Qing Xiang adjusting the welding machine to have a welding current of approximately 220 amps and 25 volts. This QA Inspector observed Mr. Zhang Heishan appeared to be certified to make this weld and the base material had been preheated with electric heating elements. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yu Chaoye, stencil 053869 used flux cored welding procedure WPS-B-T-2233T to make weld OBE11B-004. This butt weld joins the inside surface of bikepath side plates between OBG segments 11AE and 11BE. This QA Inspector observed a welding current of approximately 220 amps and 25 volts. This QA Inspector observed Mr. Yu Chaoye appeared to be certified to make this weld and the base material had been preheated with electric heating elements. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Cao Xinglong, stencil 069683 is using shielded metal arc welding procedure WPS-B-P-2214-B-U2-FCM-1 to make weld OBW11B-003. This butt weld joins the exterior surface of the bottom plates between OBG segments 11AW and 11BW. This QA Inspector observed a welding current of approximately 150 amps and Mr. Cao Xinglong appeared to be certified to perform this welding. A torch was used to preheat the base materials and the welding electrodes were being stored in a portable rod oven which was warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Liu Tong Xia, stencil 040484 used shielded metal arc welding procedure WPS-B-P-2214-FCM-1 to make hold back welds FB203-013-017 through -024. These floor beam stiffener plate welds are on the inside of OBG cross beam 13. This QA Inspector observed a welding current of approximately 160 amps. This QA Inspector observed that Ms. Liu Tong Xia appeared to be certified to perform

this welding and the electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Sun Guang Ping, stencil 050289 used shielded metal arc welding procedure WPS-B-P-2214-FCM-1 to make hold back welds SP206-013-042 through -057. These side plate stiffener plate welds are on the inside of OBG cross beam 13. This QA Inspector observed ZPMC CWI Mr. An Qing Xiang has recorded a welding current of 152 amps and this QA Inspector measured a welding current of approximately 170 amps. This QA Inspector informed Mr. An Qing Xiang that Mr. Sun Guang Ping has a welding current that was approximately 10 amps above the maximum allowed by the WPS and he had the welding current decreased to approximately 150 amps. This QA Inspector observed that Mr. Sun Guang Ping appeared to be certified to perform this welding and the electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Huang Zhao, stencil 056200 used shielded metal arc welding procedure WPS-B-P-2214-FCM-1 to make hold back welds FB019-005-005 through 13. These floor beam stiffener plate welds are on the inside of OBG cross beam 13. ZPMC CWI Mr. An Qing Xiang has recorded a welding current of 154 amps. This QA Inspector observed that Mr. Huang Zhao appeared to be certified to perform this welding and the electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Chen Hong Ye, stencil 040270 used shielded metal arc welding procedure WPS-B-P-2214-FCM-1 to make hold back welds FB027-009-019 and -020. These floor beam stiffener plate welds are on the inside of OBG cross beam 13. This QA Inspector observed a welding current of approximately 160 amps. This QA Inspector observed that Mr. Chen Hong Ye appeared to be certified to perform this welding and the electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Xu Jian Wen, stencil 040378 used shielded metal arc welding procedure WPS-B-P-2214-FCM-1 to make hold back welds FB028-009-013 and -014. These floor beam stiffener plate welds are on the inside of OBG cross beam 13. This QA Inspector observed a welding current of approximately 155 amps. This QA Inspector observed that Mr. Xu Jian Wen appeared to be certified to perform this welding and the electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

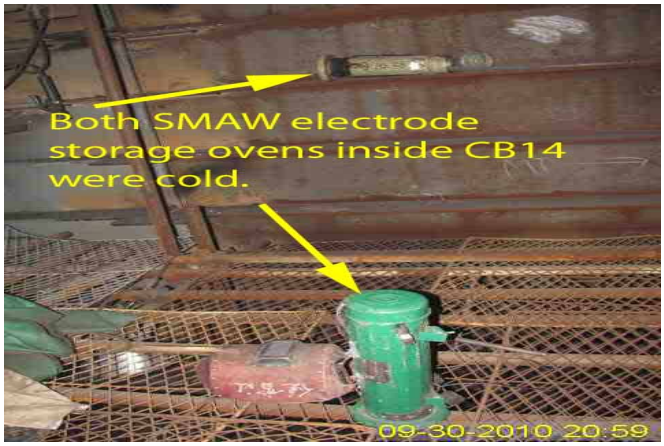
This QA Inspector observed ZPMC welder Ms. Ye Xulan, stencil 040581 used shielded metal arc welding procedure WPS-B-P-2214-FCM-1 to make hold back welds SEG059D-077 and -078. These deck plate stiffener plate welds are on the inside of OBG cross beam 13. This QA Inspector observed a welding current of approximately 160 amps. This QA Inspector observed that Ms. Ye Xulan appeared to be certified to perform this welding and the electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

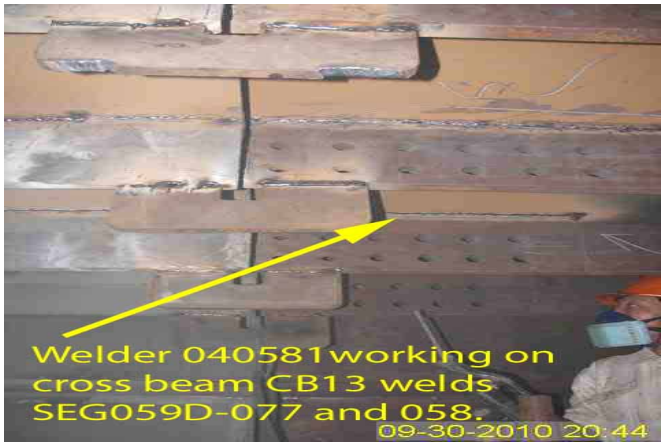
This QA Inspector observed ZPMC welder Mr. Tang Yung, stencil 052493 used shielded metal arc welding procedure WPS-B-P-2214-B-U2-FCM-1 to make weld OBE11B-005. This weld joins the interior side of the edge plates between OBG segments 11AW and 11BW. This QA Inspector observed a welding current of

approximately 175 amps and the WPS lists a maximum welding current of 160 amps. This QA Inspector informed ZPMC CWI Mr. Liu Hua Jie that the welding current appears to be approximately 15 amps above the maximum listed in the WPS and Mr. Liu Hua Jie had the welder adjust the welding machine to approximately 155 amps. This QA Inspector observed that Mr. Tang Yung appeared to be certified to perform this welding and the electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

ZPMC CWI Mr. Liu Hua Jie informed this QA Inspector that ZPMC personnel have tack welded longitudinal diaphragm LD78C into position. This LD is located on OBG segment 11BW adjacent to 11AW on the cross beam side. This QA Inspector did not observe any personnel working at this location.

This QA Inspector observed no ZPMC welders working inside OBG cross beam 14. ZPMC CWI Mr. Liu Hua Jie informed this QA Inspector that welders stencil 037723 and 067609 had previously been performing welding inside OBG cross beam 14 and they had now left work. This QA Inspector observed three electrode storage ovens inside OBG cross beam 14. One of the ovens was not connected to any electrical power supply and it contained shielded metal arc welding electrodes that were cold to the touch, a second oven was not connected to a power supply and the electrodes were cool, but not hot, to the touch. The third oven was connected to an electrical power cable and it was warm to the touch. This QA Inspector showed CWI Mr. Liu Hua Jie each of the electrode ovens and he informed this QA Inspector that he will inform the ZPMC supervisor that these electrodes need to be removed. See the photograph below for additional information.





Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By: Dawson,Paul Quality Assurance Inspector

WELDING INSPECTION REPORT

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Reviewed By: Carreon,Albert QA Reviewer